

WHAT IS CLAIMED IS:

1. A liquid crystal display comprising:

- (a) a first transparent plate;
- (b) a second transparent plate;
- (c) a liquid crystal display panel positioned between said first and second transparent plates, said liquid crystal display panel comprising a first transparent substrate, a second transparent substrate, liquid crystal material positioned between said first and second transparent substrates, a first transparent electrode positioned between said liquid crystal material and said first transparent substrate, and a second transparent electrode positioned between said liquid crystal material and said second transparent substrate;
- (d) a rear polarizer positioned between said liquid crystal display panel and said second transparent plate; and
- (e) a front polarizer positioned in front of said first transparent plate, said front polarizer being crossed relative to said rear polarizer.

2. The liquid crystal display as claimed in claim 1 wherein each of said first and second transparent plates is made of glass.

3. The liquid crystal display as claimed in claim 2 further comprising an electromagnetic interference shield positioned between said first transparent plate and said liquid crystal display panel.

4. The liquid crystal display as claimed in claim 3 wherein said electromagnetic interference shield is an indium tin oxide thin film coating applied to the first transparent plate.

5. The liquid crystal display as claimed in claim 1 further comprising a third transparent plate, said third transparent plate being positioned in front of said front polarizer.

6. The liquid crystal display as claimed in claim 5 wherein each of said first, second and third transparent plate is made of glass.

7. The liquid crystal display as claimed in claim 6 further comprising an anti-reflection coating, said anti-reflection coating being applied to the front of said third transparent plate.

8. The liquid crystal display as claimed in claim 5 wherein said third transparent plate is made of plastic, said third transparent plate being textured to reduce glare.

9. The liquid crystal display as claimed in claim 5 further comprising a transparent thin film, said transparent thin film having an anti-reflective coating on a front side thereof and an index-matched pressure sensitive adhesive on a rear side thereof, said index-matched pressure sensitive adhesive being placed in contact with said third transparent plate.

10. The liquid crystal display as claimed in claim 1 further comprising a first compensation film and a second compensation film, said first compensation film being positioned between said first polarizer and said liquid crystal display panel, said second compensation film being positioned between said second polarizer and said liquid crystal display panel.

11. The liquid crystal display as claimed in claim 1 wherein said liquid crystal display panel is an active matrix liquid crystal display panel.

12. The liquid crystal display as claimed in claim 1 further comprising a backlight, said backlight being positioned behind said second transparent plate.

13. The liquid crystal display as claimed in claim 1 further comprising a heating element adapted to be connected to a power source, said heating element being positioned between said rear polarizer and said second transparent plate.

14. The liquid crystal display as claimed in claim 13 wherein said heating element comprises an indium tin oxide coating applied to said second transparent plate.

15. The liquid crystal display as claimed in claim 1 wherein said rear polarizer is adhered directly to said liquid crystal display panel.

16. The liquid crystal display as claimed in claim 1 wherein said front polarizer is adhered directly to said third transparent plate.

17. A liquid crystal display comprising:

- (a) a first transparent plate;
- (b) a second transparent plate;
- (c) a liquid crystal display panel positioned between said first and second transparent plates, said liquid crystal display panel comprising a first transparent substrate, a second transparent substrate, liquid crystal material positioned between said first and second transparent substrates, a first transparent electrode positioned between said liquid crystal material and said first transparent substrate, and a second transparent electrode positioned between said liquid crystal material and said second transparent substrate;
- (d) a rear polarizer positioned between said liquid crystal display panel and said second transparent plate;
- (e) a front polarizer positioned in front of said first transparent plate, said front polarizer being crossed relative to said rear polarizer;

(f) an electromagnetic interference shield positioned between said first transparent plate and said liquid crystal display panel; and

(g) a third transparent plate positioned in front of said front polarizer.

18. The liquid crystal display as claimed in claim 17 wherein all of said first transparent plate, said second transparent plate, said third transparent plate, said front polarizer, said rear polarizer and said electromagnetic interference shield have indices of refraction that are substantially matched.

19. The liquid crystal display as claimed in claim 18 further comprising a heating element positioned between said rear polarizer and said second transparent plate and adapted to be connected to a power source for use as a heating element, said heating element having an index of refraction substantially matching that of said rear polarizer and that of said second transparent plate.

20. The liquid crystal display as claimed in claim 19 wherein said heating element is a coating applied to said third transparent plate and wherein said electromagnetic shield is a coating applied to said first transparent plate.

21. The liquid crystal display as claimed in claim 20 wherein said front polarizer is adhered to said third transparent plate with an index-matched pressure sensitive adhesive and is bonded to said first transparent plate with an index-matched optical bonding material, wherein said rear polarizer is adhered to said liquid crystal panel with an index-matched pressure sensitive adhesive and is bonded to said heating element with an index-matched optical bonding material and wherein said electromagnetic interference shield is bonded to said liquid crystal display with an index-matched optical bonding material.

22. The liquid crystal display as claimed in claim 21 further comprising an anti-reflection coating applied to the front of said third transparent plate.

23. The liquid crystal display as claimed in claim 22 further comprising a backlight positioned behind said second transparent plate.

24. The liquid crystal display as claimed in claim 23 wherein said liquid crystal display panel is an active matrix liquid crystal display panel.

25. A liquid crystal display comprising:

(a) a liquid crystal display panel, said liquid crystal display panel comprising a first transparent substrate, a second transparent substrate, liquid crystal material positioned between said first and second transparent substrates, a first transparent electrode positioned between said liquid crystal material and said first transparent substrate, and a second transparent electrode positioned between said liquid crystal material and said second transparent substrate;

(b) a rear polarizer positioned behind said liquid crystal display panel, said rear polarizer being directly adhered to said liquid crystal display panel with a first index-matched, pressure sensitive adhesive;

(c) a front polarizer positioned in front of said liquid crystal display panel, said front polarizer being crossed relative to said rear polarizer and being directly adhered to said liquid crystal display panel with an index-matched optical bonding material; and

(d) a transparent cover, said transparent cover being positioned in front of said front polarizer and being directly adhered thereto with a second index-matched, pressure-sensitive adhesive.

26. The liquid crystal display as claimed in claim 25 wherein said transparent cover is a transparent plate made of a material selected from the group consisting of glass and plastic.

27. The liquid crystal display as claimed in claim 26 wherein said transparent cover is a transparent plastic plate.

28. The liquid crystal display as claimed in claim 26 further comprising an anti-reflective coating deposited onto the front surface of said transparent cover.

29. The liquid crystal display as claimed in claim 26 further comprising a transparent thin film, said transparent thin film having an anti-reflective coating on a front side thereof and a third index-matched pressure sensitive adhesive on a rear side thereof, said third index-matched pressure sensitive adhesive being placed in contact with said transparent cover.

30. The liquid crystal display as claimed in claim 25 wherein said transparent cover is a touch panel.

31. A liquid crystal display comprising:

(a) a liquid crystal display panel, said liquid crystal display panel comprising a first transparent substrate, a second transparent substrate, liquid crystal material positioned between said first and second transparent substrates, a first transparent electrode positioned between said liquid crystal material and said first transparent substrate, and a second transparent electrode positioned between said liquid crystal material and said second transparent substrate;

(b) a rear polarizer assembly positioned behind said liquid crystal display panel and adhered directly thereto, said rear polarizer assembly comprising a first compensation film having a front side and a rear side, a first polarizer mounted on said rear side of said first compensation film, and a first index-matched, pressure sensitive adhesive mounted on said rear side of said first

compensation film, said first index-matched, pressure sensitive adhesive placed in contact with said liquid crystal display panel;

(c) a front polarizer assembly positioned in front of said liquid crystal display panel, said front polarizer assembly being directly adhered to said liquid crystal display panel with an index-matched optical bonding material and comprising a second polarizer, said second polarizer having a front side and a rear side and being crossed relative to said first polarizer, a compensation film mounted on said rear side of said second polarizer, and a second index-matched pressure sensitive adhesive mounted on said front side of said second polarizer; and

(d) a transparent cover, said transparent cover being positioned in front of said front polarizer assembly and in direct contact with said second index-matched pressure sensitive adhesive.

32. The liquid crystal display as claimed in claim 31 wherein said transparent cover is a transparent plate made of a material selected from the group consisting of plastic and glass.

33. The liquid crystal display as claimed in claim 32 wherein said transparent cover is a transparent plastic plate.

34. The liquid crystal display as claimed in claim 33 wherein said transparent cover is textured to reduce glare.

35. The liquid crystal display as claimed in claim 32 further comprising an anti-reflective coating deposited onto the front surface of said transparent cover.

36. The liquid crystal display as claimed in claim 32 further comprising a transparent thin film, said transparent thin film having an anti-reflective coating on a front side thereof and a third index-matched pressure sensitive adhesive on a rear side thereof, said third index-matched pressure sensitive adhesive being placed in contact with said transparent cover.

37. The liquid crystal display as claimed in claim 31 wherein said transparent cover is a touch panel.

38. A liquid crystal display comprising:

(a) a liquid crystal display panel, said liquid crystal display panel comprising a first transparent substrate, a second transparent substrate, liquid crystal material positioned between said first and second transparent substrates, a first transparent electrode positioned between said liquid crystal material and said first transparent substrate, and a second transparent electrode positioned between said liquid crystal material and said second transparent substrate;

(b) a rear polarizer assembly positioned behind said liquid crystal display panel, said rear polarizer assembly comprising a rear polarizer and a first index-matched pressure sensitive adhesive, said rear polarizer having a front side and a rear side, said first index-matched pressure sensitive adhesive being positioned on said front side of said rear polarizer;

(c) a front polarizer assembly positioned in front of said liquid crystal display panel and separated from said liquid crystal display by an air gap, said front polarizer assembly comprising a front polarizer and a second index-matched pressure sensitive adhesive, said front polarizer being crossed relative to said rear polarizer and having a front side and a rear side, said second index-matched pressure sensitive adhesive being positioned on said front side of said front polarizer; and

(d) a transparent cover, said transparent cover being positioned in front of said front polarizer assembly and in contact with said second index-matched pressure sensitive adhesive.

39. The liquid crystal display as claimed in claim 38 wherein said transparent cover is a glass plate.

40. The liquid crystal display as claimed in claim 38 wherein said transparent cover is a plastic plate.

41. The liquid crystal display as claimed in claim 38 wherein said transparent cover is a touch panel.

42. The liquid crystal display as claimed in claim 38 wherein said rear polarizer assembly further comprises a first compensation film, said first compensation film being positioned between said rear polarizer and said first index-matched, pressure sensitive adhesive and wherein said front polarizer assembly further comprises a second compensation film, said second compensation film being positioned behind said front polarizer.

43. The liquid crystal display as claimed in claim 38 further comprising an anti-reflection coating positioned in front of said transparent cover.

44. The liquid crystal display as claimed in claim 43 wherein said transparent cover is selected from the group consisting of a glass plate and a plastic plate.

45. A polarizer assembly comprising:

(a) a polarizer, said polarizer having a front side and a rear side;

(b) an adhesive, said adhesive being mounted on said front side of said polarizer; and

(c) a wide viewing angle film, said wide viewing angle film being mounted on said rear side of said polarizer.

46. The polarizer assembly as claimed in claim 45 wherein said adhesive is an index-matched, pressure sensitive adhesive.